

## **REMARKS**

### **Status of Claims:**

In the Office Action, claims 1-18 were pending. Claims 1-18 were rejected. Before discussing the specific rejections, some discussion of filiform resistance is necessary. Powder coating compositions are very susceptible to filiform corrosion, especially when they are applied over aluminum substrates. Filiform corrosion generally appears as a filamentous, worm-like defect under the coating layer. Because filiform corrosion adversely affects appearance and can cause coating layers to peel away from the substrate, it is very a serious problem. Surprisingly, we have found that particular phenolic compounds which are known antioxidants but not known to improve filiform corrosion resistance can be added to a coating composition to improve resistance to filiform corrosion.

The specific rejections are discussed below.

### **I. Rejection under 35 U.S.C. § 102(b) as being anticipated by US Patent No. 4,801,680 ("Geary") as evidenced by US Patent No. 6,103,794 ("Laver")**

In the Office Action, claims 1-3, 5-6, 8-15, and 18 were rejected under 35 U.S.C. § 102(b) as being anticipated by Geary as evidenced by Laver.

#### **A. The Invention**

The present invention is a powder clear coat composition having improved filliform resistance. See amended claim 1 above.

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#### **B. The Geary Reference**

The Geary reference teaches thermosetting powder coating compositions. As described in claim 1, the invention of Geary is a powder coating composition comprising a co-reactable particulate mixture of: (a) a carboxylic acid group-containing polyester and (b) a beta-hydroxyalkylamide.

As shown in Example 1, the coating composition of Geary can contain Irganox 1076. According to the Examiner, the structure of Irganox 1076 is disclosed in Laver.

### **C. Traversal of the Rejection**

To anticipate a claim under 35 U.S.C. § 102(b), a single source must contain all of the elements of the claim. See Hybritech Inc. v. Monoclonal Antibodies, Inc., 802 F.2d 1367, 1379, 231 U.S.P.Q. 81,90 (Fed. Cir. 1986).

In this case, the present invention is a coating composition comprising a phenolic compound having alkyl or branched alkyl substituted groups as the two groups adjacent to the hydroxy group on the aromatic ring.

The Geary reference teaches a powder coating composition comprising a carboxylic acid group containing polyester and a beta-hydroxyalkylamide. As shown in Example 1, the coating composition taught by Geary can also include Irganox 1076.

The Examiner believes that Irganox 1076 teaches the phenolic compound of the present invention. As shown in column 2, Figure 1 of Laver, Irganox 1076 does not teach or suggest a phenolic compound having alkyl or branched alkyl substituted groups as the two groups adjacent to the hydroxy group on the aromatic ring.

Therefore, Geary as evidenced by Laver does not teach all of the elements of the claimed invention, and the rejection of claims 1-3, 5-6, 8-15, and 18 over Geary as evidenced by Laver are improper and should be withdrawn.

### **II. Rejection under 35 U.S.C. § 102(b) as being anticipated by US Patent No. 6,069,221 ("Chasser") as evidenced by Laver**

In the Office Action, claims 1-3, 5-6, 8, 10-15, and 18 were rejected under 35 U.S.C. § 102(b) as being anticipated by Chasser in view of Laver.

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#### **A. The Chasser Reference**

The Chasser reference teaches curable powder coating compositions. As described in claim 1, the invention of Chasser is a curable powder coating composition comprising a particulate film-forming mixture of a polymer containing reactive functional groups and a curing agent therefore having functional groups reactive with the functional groups of the polymer and being present in an amount sufficient to cure said polymer.

## **B. Traversal of the Rejection**

To anticipate a claim under 35 U.S.C. § 102(b), a single source must contain all of the elements of the claim. See Hybritech Inc. v. Monoclonal Antibodies, Inc., 802 F.2d 1367, 1379, 231 U.S.P.Q. 81,90 (Fed. Cir. 1986).

In this case, the present invention is a coating composition comprising a phenolic compound having alkyl or branched alkyl substituted groups as the two groups adjacent to the hydroxy group on the aromatic ring.

The Chasser reference teaches a powder coating composition comprising a polymer with reactive functional groups and a curing agent. As disclosed in column 6, lines 35-40 and shown in Examples A and B, coating compositions according to Chasser can contain Irganox 1076 and Tinuvin 900 or 144.

The Examiner believes that Irganox 1076 and/or Tinuvin 900 or 144 teach the phenolic compound of the present invention. As shown in column 2, Figure 1 of Laver, the Irganox 1076 (stabilizer in Laver) has two phenolic groups. Tinuvin 900 is micronized 2-(2-hydroxy-benzotriazol-2yl)-4,5 bis (methyl-1 phenylethyl) phenol so it also has two phenolic groups. Tinuvin 144 is 2-tert-butyl-2-(4-hydroxy-3,5-di-tert butylbenzyl)[bis(methyl-2, 26, 6-tetramethyl-4-piperinyl)] dipropionate.

The Chasser reference does not teach a coating composition comprising a phenolic compound having alkyl or branched alkyl substituted groups as the two groups adjacent to the hydroxy group on the aromatic ring. Therefore, Chasser in light of Laver does not teach all of the elements of the claimed invention, and the rejection of claims 1-3, 5-6, 8-15, and 18 over Chasser are improper and should be withdrawn.

## **III. Rejection under 35 U.S.C. § 102(b) as being anticipated by US Patent No. 5,719,212 ("Nakae")**

In the Office Action, claims 1-6, 12-14, and 18 were rejected under 35 U.S.C. § 102(b) as being anticipated by Nakae. The Examiner stated that Nakae discloses powder coating compositions comprising epoxy-functional acrylic resins, polycarboxylic acid curing agents, and an antioxidant.

### **A. The Nakae Reference**

The Nakae reference is directed toward powder coating compositions. As

described in claim 1, the invention of Nakae is a powder coating composition comprising:

(A) an epoxy group-containing acrylic resin prepared by polymerizing a monomer mixture which comprises, (a) 35 to 65% by weight of an epoxy group-containing ethylenically unsaturated monomer, and (b) remainder amount of an ethylenically unsaturated monomer which is different from the epoxy group-containing ethylenically unsaturated monomer;

(B) a polycarboxylic acid; and

(C) from 0.1 to 10 parts by weight based on 100 parts of the total weight of epoxy group-containing acrylic resin (A) and polycarboxylic acid (B) of an antioxidant having a melting point of from 50°C to 140°C.

A suitable antioxidant is 2,6-di-t-butyl-4-methylphenol having a melting point of 71°C.

#### **B. Traversal of the Rejection**

To anticipate a claim under 35 U.S.C. § 102(b), a single source must contain all of the elements of the claim. See Hybritech Inc. v. Monoclonal Antibodies, Inc., 802 F.2d 1367, 1379, 231 U.S.P.Q. 81,90 (Fed. Cir. 1986).

In this case, the prevent invention is a coating composition comprising a carboxylic functional polymer and a beta hydroxyalkylamide curing agent.

The Nakae reference teaches a coating composition comprising an epoxy group-containing acrylic resin, a polycarboxylic acid, and an antioxidant.

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The Nakae reference does not teach a coating composition comprising a carboxylic functional polymer and a beta hydroxyalkylamide curing agent. Therefore, Nakae in light of Laver does not teach all of the elements of the claimed invention, and the rejection of claims 1-3, 5-6, 8-15, and 18 over Nakae are improper and should be withdrawn.

#### **IV. Rejection under 35 U.S.C. § 102(b) as being anticipated by Laver as evidenced by Tobias**

In the Office Action, claims 1-5, 8-15, and 18 were rejected under 35 U.S.C. § 102(b) as being anticipated by Laver as evidenced by Tobias.

##### **A. The Cited References**

### **1. The Laver Referenc**

The Laver Reference teaches a powder coating composition. As described in claim 1, the coating composition comprises an organic film-forming binder and a stabilizer having a specified formula.

### **2. The Tobias Reference**

The Tobias reference teaches hot melt ink compositions. As described in claim 1, the invention of Tobias is a hot melt ink composition for use in continuous ink jet printing comprising an electrolyte, an electrolyte-solvating and dissociating compound and an image-forming agent.

### **C. Traversal of the Rejection**

To anticipate a claim under 35 U.S.C. § 102(b), a single source must contain all of the elements of the claim. See Hybritech Inc. v. Monoclonal Antibodies, Inc., 802 F.2d 1367, 1379, 231 U.S.P.Q. 81, 90 (Fed. Cir. 1986).

Starting at column 34, line 14 in Laver, there is discussion about antioxidants that can be added to the coating composition. The discussion continues to column 37, line 28. Several hundred, at least, antioxidants are mentioned in the discussion. One of the mentioned antioxidants is 2,6-di-tert-butyl-4-methylphenol.

To select one compound from such a laundry list of possible compounds does not constitute a teaching or suggestion to form a coating composition comprising a phenolic compound having alkyl or branched alkyl substituted groups as the two groups adjacent to the hydroxy group on the aromatic ring to obtain a coated substrate with improved-filiform corrosion resistance. Further, there is no teaching or suggestion of the subject matter in claims 6 and 7.

Because Laver as evidenced by Tobias does not teach all of the elements of the claimed invention, the rejection of claims 1-3, 5-6, 8-15, and 18 over Laver are improper and should be withdrawn.

### **IV. Rejection under 35 U.S.C. § 103(a) over Laver as evidenced by Tobias**

In the Office Action, claims 16-17 were rejected under 35 U.S.C. § 103(a) as being unpatentable over Laver as evidenced by Tobias.

Claims 16-17 have been cancelled.

### **A. Traversal of the Rejection**

## **V. Rejection under 35 U.S.C. § 103(a) over Chasser as evidenced by Laver and in view of Nakee**

In the Office Action, claim 4 was rejected under as being unpatentable 35 USC §103(a) over Chasser as evidenced by Laver and in view of Nakae.

### **A. Traversal of the Rejection**

To establish a prima facie case of obviousness under 35 U.S.C. § 103(a), the United States Patent and Trademark Office must satisfy three requirements. First, the prior art relied upon, coupled with the knowledge generally available in the art at the time of the invention, must contain some suggestion or incentive that would have motivated the skilled artisan to modify a reference or to combine references. See In re Fine, 837 F.2d 1071, 1074, 5 U.S.P.Q.2d 1596, 1598 (Fed. Cir. 1988). Second, the proposed modification of the prior art must have had a reasonable expectation of success, determined from the vantage point of the skilled artisan at the time the invention was made. See Amgen, Inc. v. Chugai Pharm. Co. 927 F.2d 1200, 1209, 18 U.S.P.Q.2d 1016, 1023 (Fed. Cir. 1991). Third, the prior art reference or combination of references must be teach or suggest all the limitations of the claims. See In re Wilson, 424 F.2d 1382, 1385, 165 U.S.P.Q. 494, 496 (C.C.P.A 1970).

In the Office Action, the Examiner stated that it would be obvious to choose 2,6-di-tert-butyl-4-methyl-phenol as the phenolic antioxidant in Chasser to form coatings. Despite the Examiner's assertion, there is no teaching or suggestion to substitute 2,6-di-tert-butyl-4-methyl-phenol for Irganox 1076 to improve the filiform corrosion resistance of the coating. Therefore, the rejection of claim 4 under 35 U.S.C. § 103(a) is improper and should be withdrawn

## **VI. Rejection under 35 U.S.C. § 103(a) over Geary as evidenced by Laver**

In the Office Action, claim 7 was rejected under 35 U.S.C. § 103(a) as being unpatentable over Geary as evidenced by Laver.

The law concerning 35 U.S.C. § 103(a) is stated above. In the Office Action, the Examiner stated that it would have been obvious to include functional polyesters having equivalent weights of 150-600 in the composition of Geary. Despite the Examiner's assertion, there is no teaching or suggestion in Geary to use the phenolic compound of

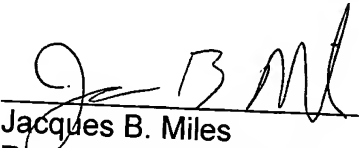
the present invention as described in the amended claims and there is no teaching or suggestion to substitute 2,6-di-tert-butyl-4-methyl-phenol for Irganox 1076 to obtain a coating with improved filiform resistance.

### **Conclusion**

In light of the amendments and remarks above, claims 1-18 should be in condition for allowance. Please call the undersigned at the telephone number below if you have any questions. Thank you for your assistance.

Respectfully Submitted,

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